



# 73rd MORSS CD Cover Page

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# 605<sup>th</sup> Test and Evaluation Squadron

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## Balancing Risks in Quick Reaction Testing



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**605 TES/TXT**  
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# Overview

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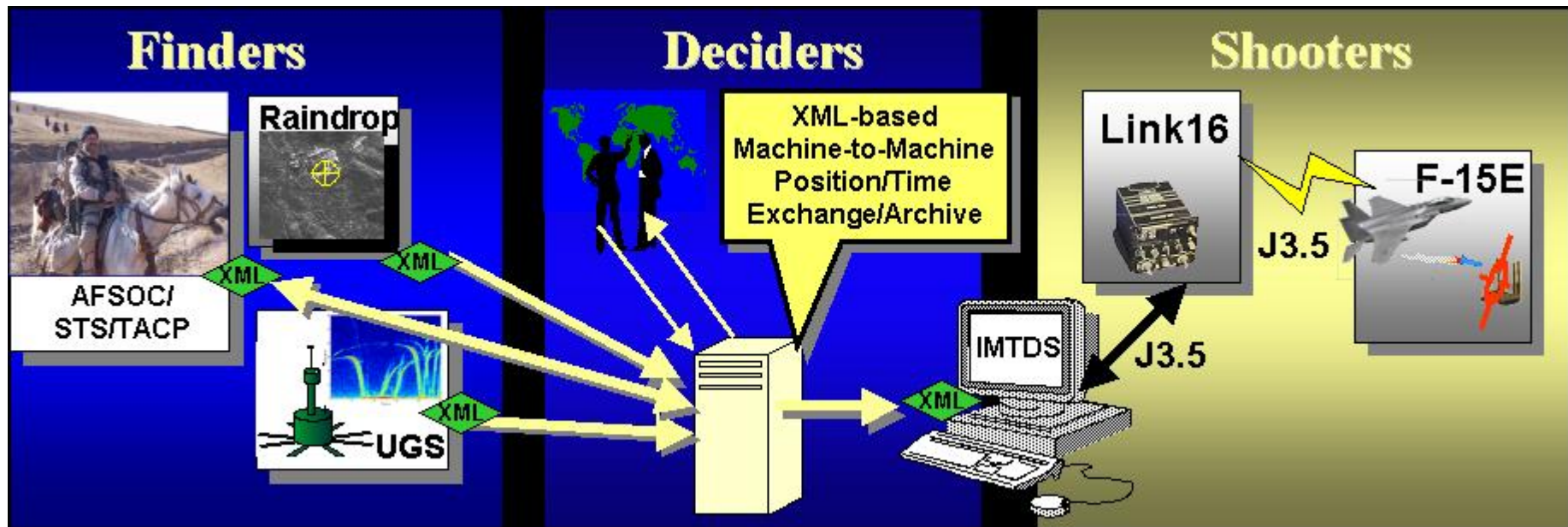
- **Cursor on Target Project Background**
- **CoT-M2MT (SECAF Directed SOF Effort)**
- **Post SOF effort: re-engaging original CoT focus**
- **Full Summary and open Q&A**



# Project Background

## ■ Initial Concept Exploration

- Applied Gen Jumper's vision of integrated command and control centers to an Operation Northern Watch need for precision coordinate dissemination to F-15Es
- MITRE & ESC collaborated to prototype and demonstrate a Cursor on Target (CoT) model showing machine to machine interface



CoT Dominance starts here.



- **Demonstrated technology to key decision makers**
- **SECAF Roche, Dr Sambur, Gen Holland, BG (Sel) Holmes), 720<sup>th</sup> Special Tactics Group, and other key acquisition offices**

- Included 720<sup>th</sup> Special Tactics, AFRL BAO-Kit, ASC and ESC Offices
- Outcome: Letter from Gen Hester to Gen Looney
  - *CoT & BAO-Kit projects converged into M2MT*





# Issues to Address

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## ■ DoD Directives & Policies

- DoD 5000.1 & 5000.2
- Defense Acquisition Guidebook

## ■ Key Points

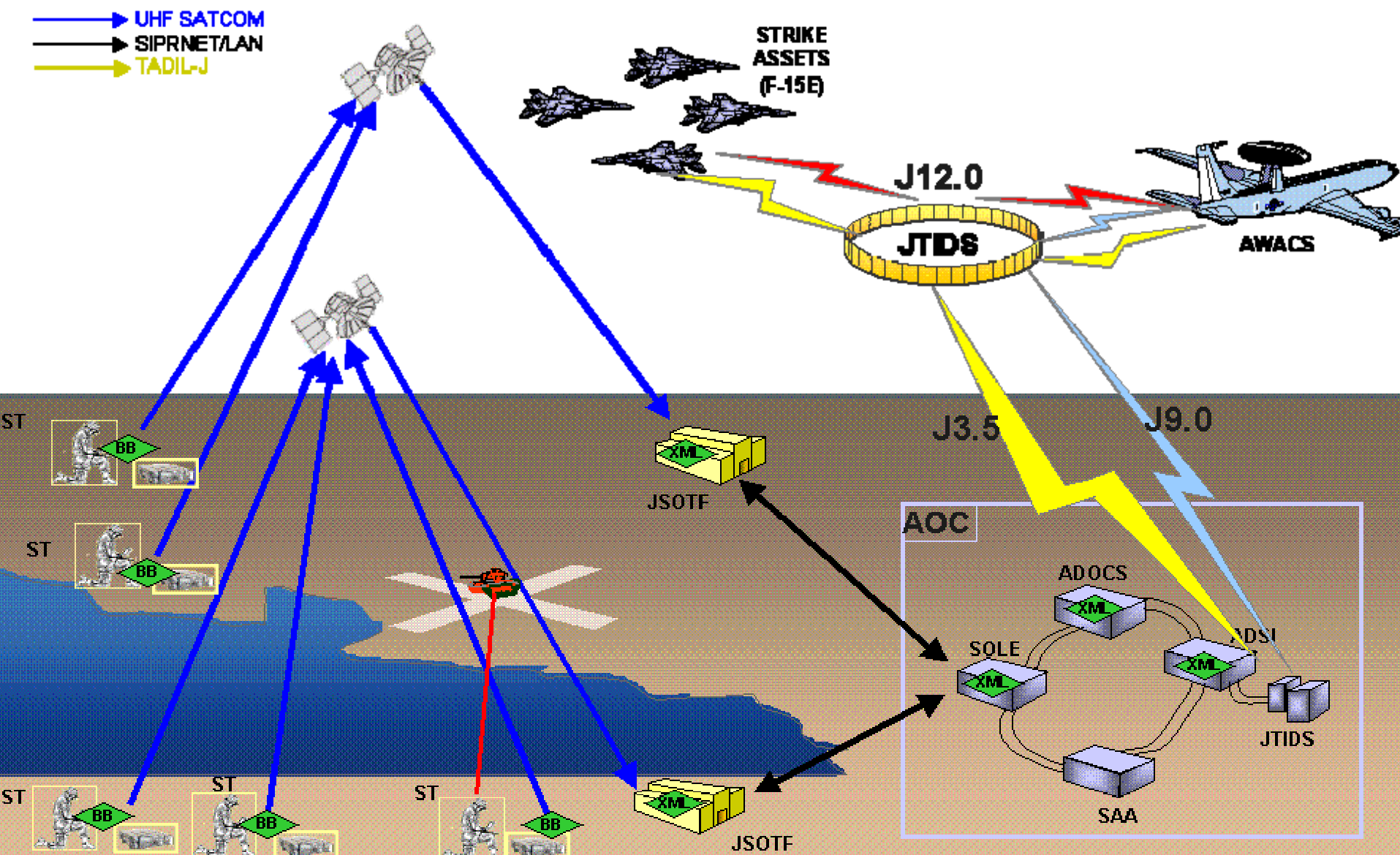
- User needs
- AoA development
- System development and demonstration
- Flexibility, responsiveness, and innovation

## ■ Mitigate risk factors

- Type I (false positive)
- Type II (false negative)
- Type III (testing in the wrong places)



# M2MT Special Tactics CONOPS







# Test Objectives

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1. Assess capability of BAO kit to provide timely targetable data to the CJSOTF/SOLE
2. Assess capability of CJSOTF ADOCS to receive CJSOTF ToughBook data from BAO kit.
3. Assess capability of AOC TST systems to process targeting data provided by the CJSOTF.
4. Assess capability of the AOC TST systems to disseminate targeting data provided by the CJSOTF.
5. Assess suitability of M2MT systems for operation in TST prosecution.
6. Assess impact of M2MT systems on current CJSOTF/ACO TTP.



# Interim (Part I) Summary

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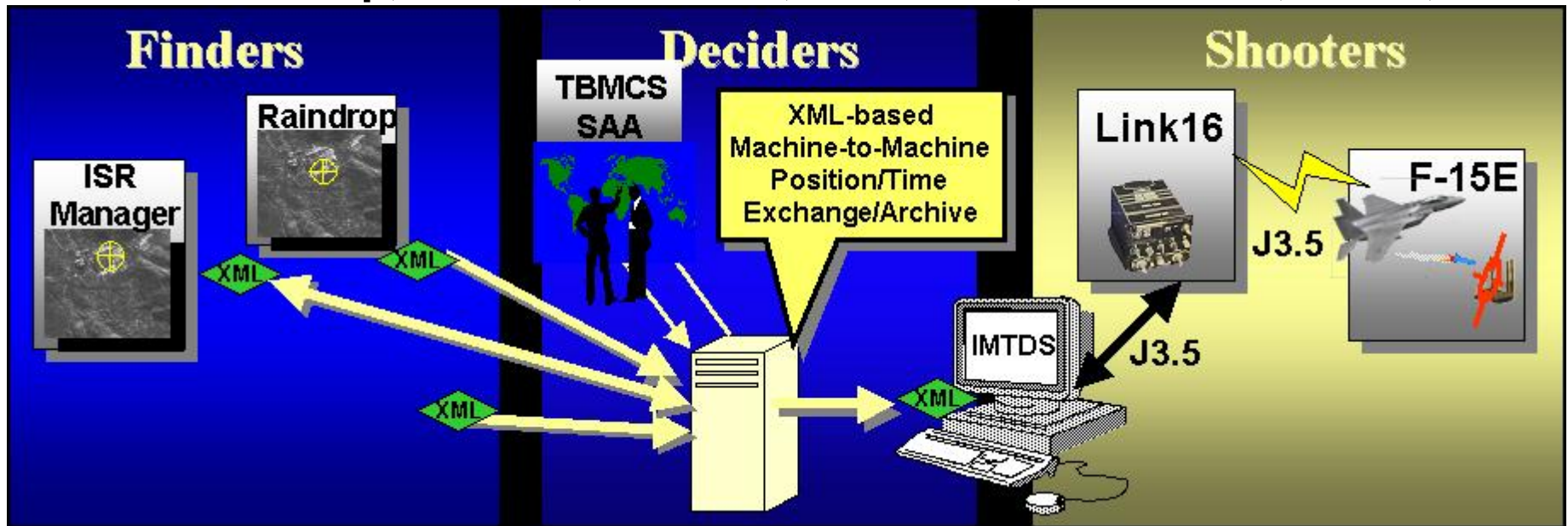
- **Cursor on Target addressed larger C2 Integration**
    - **Demonstrations attracted SOF, ASC ST SPO & AFRL interest**
  - **ASC, ESC, MITRE & AFRL combined acquisition efforts**
    - **New focus on SOF Integration, sub project named Cot-M2MT**
    - **SECAF Reviewed 22 Jan at Hurlburt Field; full demonstration**
      - **Brought SOF generated targets through AOC and into AWACS & F-15**
      - **SECAF directed fielding of demonstrated capability by April**
  - **Lt Gen Looney directed ESC support integration & fielding**
    - **Test community fully engaged; CTF Event 10-14 Mar 03**
    - **Remaining issues: test outcome, accreditation, field testing-training-deployment & transition**
  - **Request Transformation Center Oversight & Approval**
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# Post M2MT: Re-engage Original CoT AOC Efforts

- Need to work plan with Transformation Center
  - Complete integration Raindrop & Bring thru TC
  - Scope out other ISR sources for integration in AOC
  - Scope out TBMCS SAA integration
  - Engage TC's Traditional RAP in full CoT integration potential
    - Raindrop, TBMCS, AC-130s, CAF-MAF, Cmbt Trk II, SADL, etc.



CoT Dominance starts here.



# Overall Summary-Way Ahead

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- **Will TC & CCB approve CoT-M2MT fielding through involvement in Eglin CTF?**
  - **POCs and Path for M2MT regarding TC & CCB**
  
- **How shall CoT team engage TC's traditional RAP program?**
  - **POCs and path regarding continued CoT AOC integration after transitioning BAO Project to ST SPO**

# 605<sup>th</sup> Test and Evaluation Squadron

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## M2MT Backup Slides

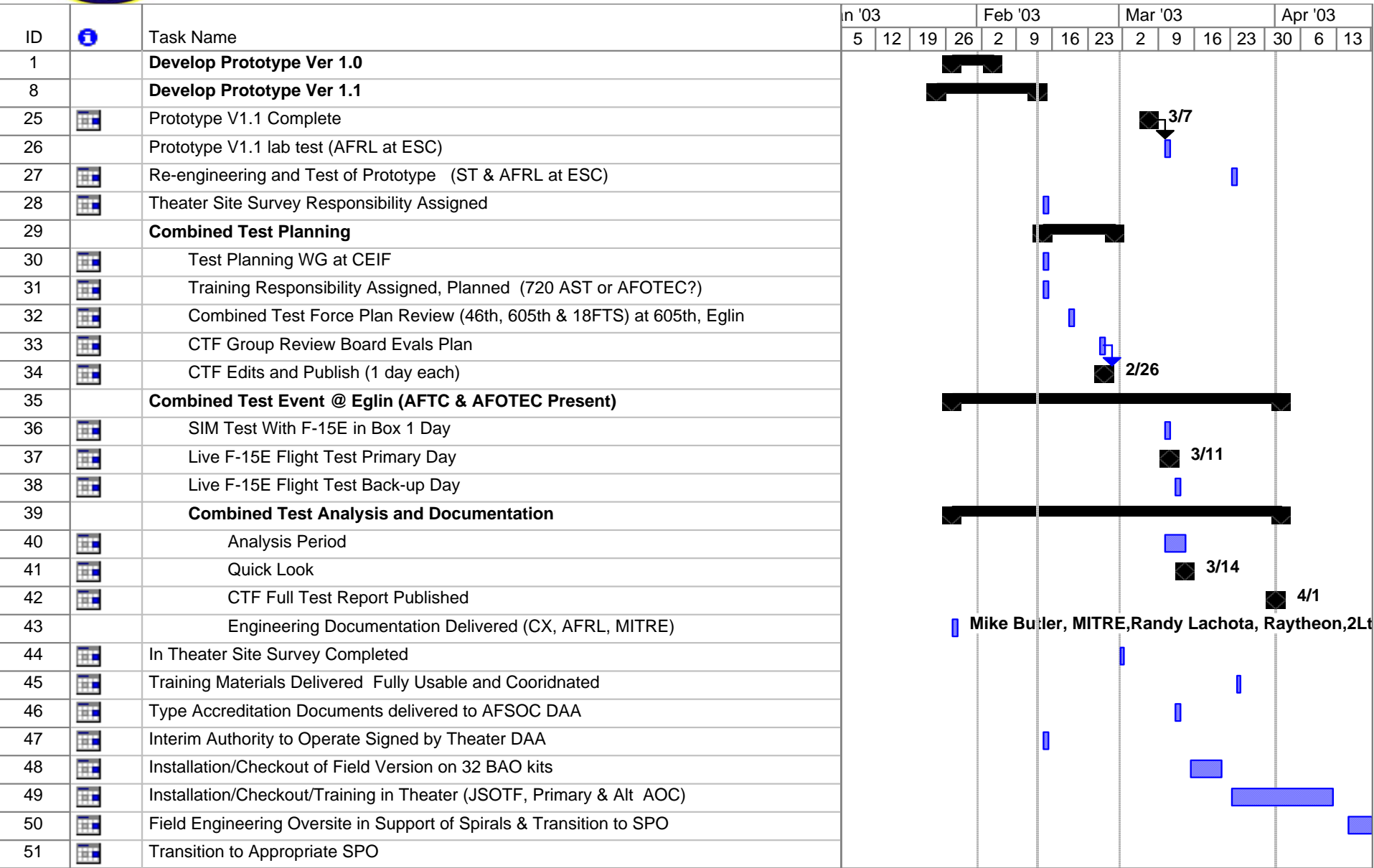


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# Rapid Acquisition Project Underway to Create Operationally Viable M2MT Prototypes





# M2MT Description & Purpose

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- **M2MT prototype implements interface using XML**
  - Carry coordinates from SOF ST thru CJSOTF into AOC-TCT Cell, across ADSI into Link-16 for an airborne F-15E, without human transcription of the data.
- **M2MT prototype implements interface using XML**
  - Accelerate TCT Kill Chain
  - Fast, accurate transfer of PGM-quality coordinates
  - Reduced opportunity for human error fratricide
- **Bigger Picture**
  - Link legacy systems through new technology. Similar interface has many potential applications, e.g., passing target coordinates from SOF Special Tactics teams, and for Blue Force Tracking. Uses web technology: XML, IP-based comm, browser interface, and URL-addressable nodes
- **Bottom Line**
  - Free up aircrew to focus on other activities



# Why This Is A Workable Enterprise Solution:

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- **Doesn't Try to Do Everything—Just the most important**
  - Minimum set of key information common to all systems (Position, Time, Type, URL)
- **Uses Simple Standards—Old or new systems can deal with it**
  - Adaptable by nearly all systems with only modest efforts (from \$2 processors to \$200,000 terminals)
- **Network-centric—Avoids locally-optimized stovepipes**
  - Each new player is connected to all other existing players for free (connectivity costs grow as “N” users not “N squared”)
- **Readily Reconfigurable—Approach handles unforeseen needs**
  - Using publish and subscribe, new ‘finders’, ‘deciders’, ‘shooters’, and mission threads can be created rapidly at end user locations without large-scale coordination





# 15 Nov 02 Nellis AFB Test Proved M2MT Works!

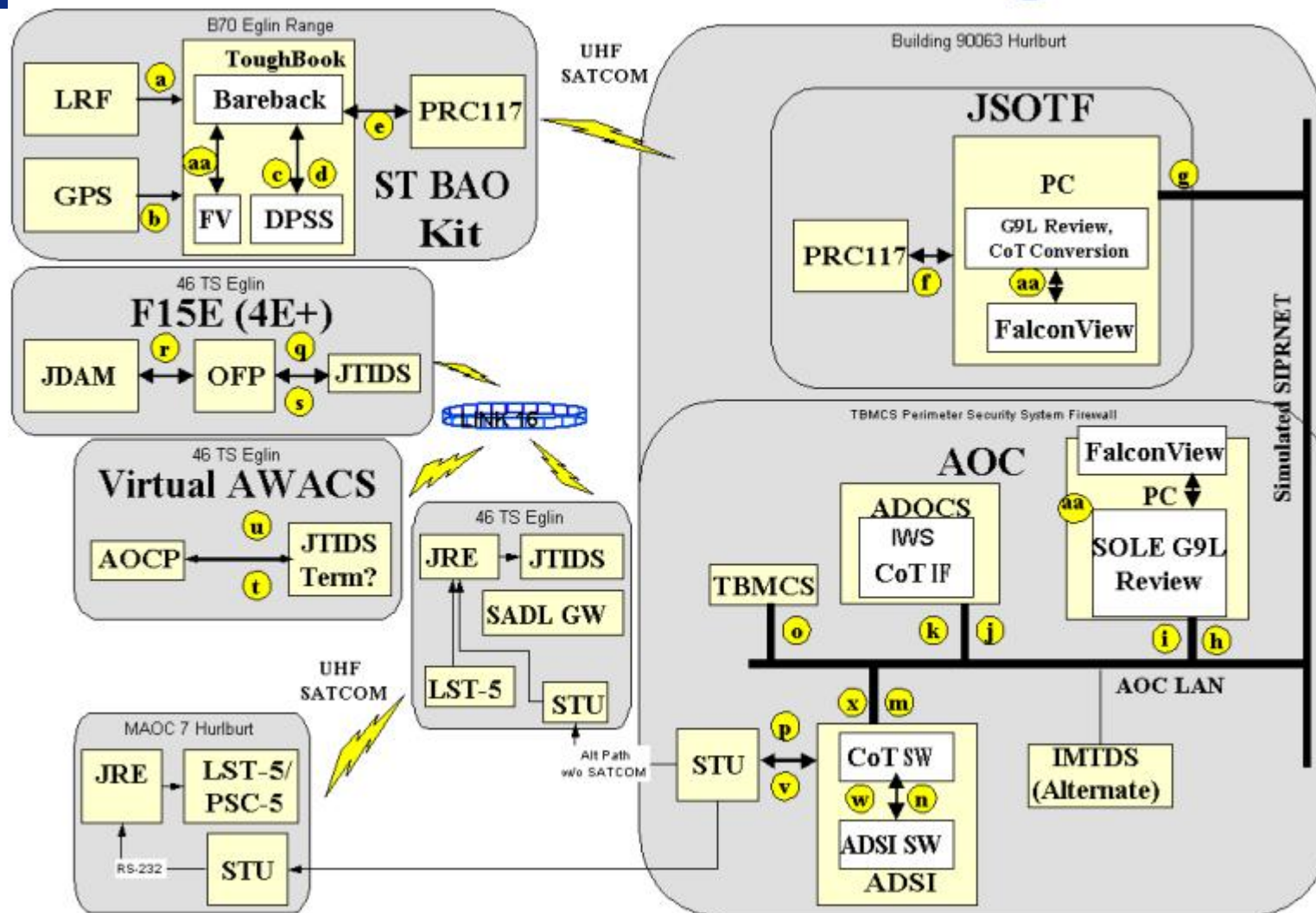
- Target Coordinates passed quickly, machine-to-machine, from coordinate mensuration tool, Raindrop, in CAOC-N, to airborne F-15Es using Cursor on Target XML interface and Link 16
- Investigating the precision of the coordinates on the F-15E, after receipt over Link 16. Are the coordinates GPS PGM-quality?



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# M2MT Test Key Data Nodes



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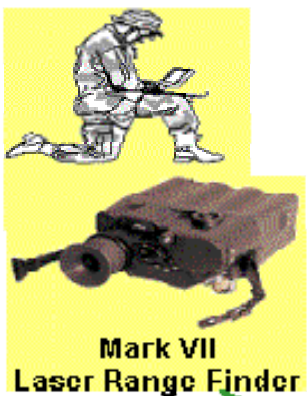
# Design - ST BAO Kit



**Precision Lightweight  
GPS Receiver**

**ST OWN  
POSITION**

**Tough Book Software**  
Falcon View -- Map Display  
Digital Precision Strike Suite -- Target Mensuration  
Bareback -- Digital interface/GUI connecting MK-7, PLGR, FV  
and DPSS Exports Compressed Binary Target Information  
(Cursor on Target schema used internally by Bareback and DPSS)



**Mark VII  
Laser Range Finder**



**Ruggedized Computer  
Panasonic CF-M34**

**COMPRESSED, ENCODED BLUE  
FORCE OR TARGET  
COORDINATES FOR  
TRANSMISSION IN  
PROPRIETARY ENCODED FORM**

**RANGE, ELEVATION  
AND AZIMUTH TO  
TARGET IN MARK VII  
FORMAT**



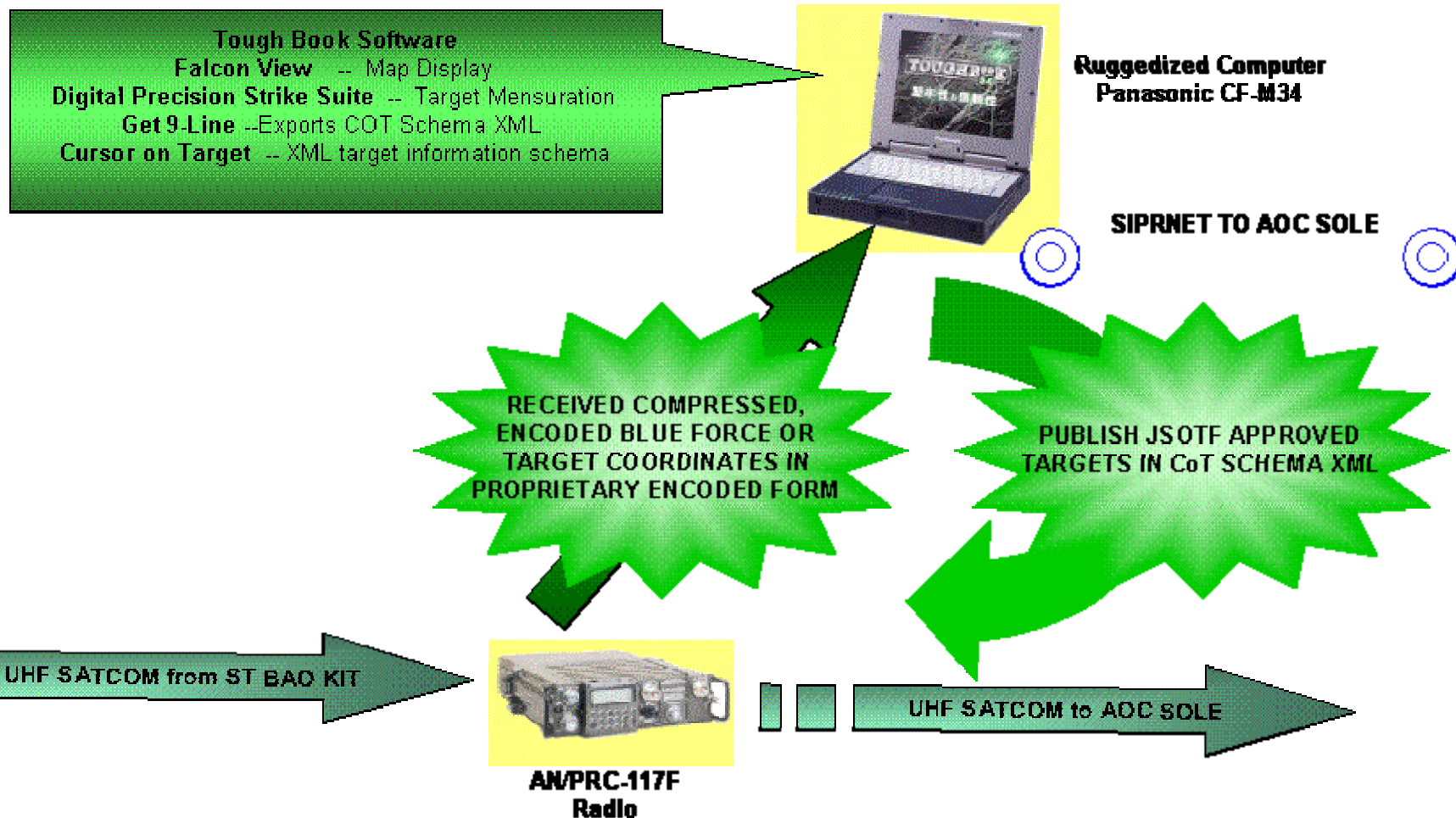
**AN/PRC-117F  
Radio**



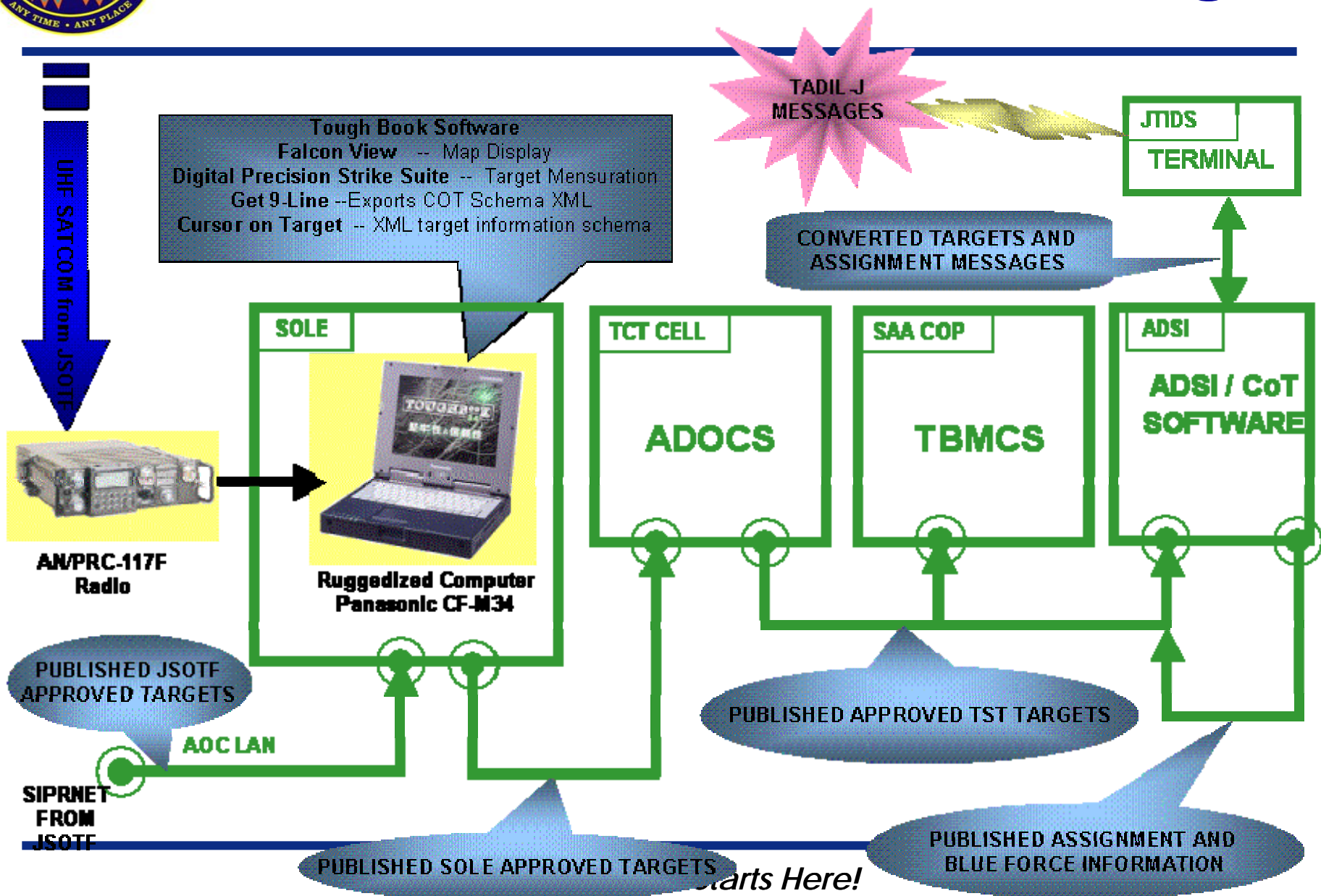
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# JSOTF Design



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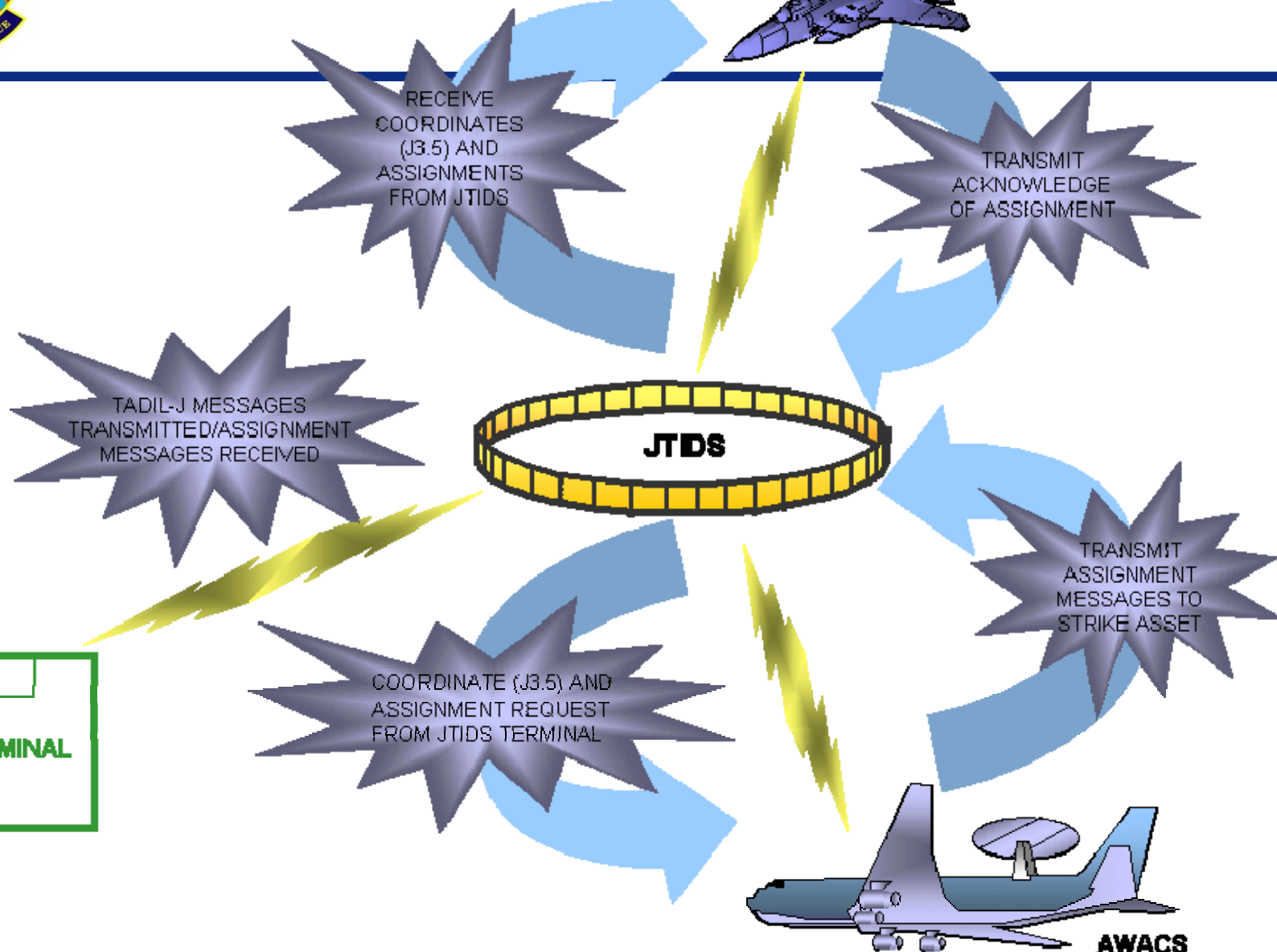




# JTIDS Design



F-15E



AWACS

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# CoT-M2MT Fits Spiral Concept

